UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/651,229	08/29/2003	Gerard Lang	5725.0590-01	9048

22852 7590 06/17/2004

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP
1300 I STREET, NW
WASHINGTON, DC 20005

EXAMINER	
ELHILO, EISA B	

ART UNIT	PAPER NUMBER
1751	

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/651,229	LANG ET AL.	
	Examiner	Art Unit	
	Eisa B Elhilo	1751	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 August 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/583,724.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claims 1-38 are pending in this application.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4, 6- 17, 21 and 23-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sorensen et al. (5,899,212).

Sorensen et al. (US' 212) teaches a hair dyeing composition comprising oxidation bases (dyeing precursors) such as p-phenylenediamine that reads on the claimed formula (1), when R1, R2, R3 and R4 are hydrogen atoms as claimed in claims 1 and 17 (see col. 9, lines 7-9), enzymatic system of 2-electron oxidoreductase such as glucose oxidase as claimed in claims 1 and 4 (see col. 6, line 61), donors such as D-glucose as claimed in claim 1(see col. 7, line 12), enzymatic mediators such as N-hydroxysuccinimide, syringate acids, 10-methylphenothiazine and 3,3-dimethylbenzidine as claimed in claims 1 and 10-14 (see col. 8, lines 6-29). Regarding claims 6-9, 15-16 and 23-24 it would have been obvious to one having ordinary skill in the art at the time of the invention to make such a dyeing composition by optimizing the amounts of the dyeing ingredients in the composition because the reference teaches a hair dyeing composition comprising precursor solution containing 0.1% w/w of para-phenylensdiamine (oxidation base), 0.07% of meta-phenylenediamine (coupler) to which was added enzyme solution in the amount of 50μL of a 1170 LAMU/mL) (see col. 13, lines 1-4), and, hence, a person of ordinary skill

would be motivated to optimize the amounts of the enzymes, donors, mediators and oxidation bases in the dyeing composition so as to get the maximum effective amount, absent unexpected results. The dyeing composition of Sorensen et al. (US' 212) also comprises para-aminoiphenol as claimed in claim 21 (see col. 9, line 9), modifiers (couplers) such as m-diamines and m-aminophenol as claimed in claims 26-28, (see col. 10, line 3), acid addition salts such as sodium acetate as claimed in claim 29, (see col. 13, line 1). Sorensen et al. (US' 212) also teaches that the enzymatic dyeing composition has a pH in the range of 5.5 to 10.5 which is overlapped with the claimed range as claimed in claim 30, (see col. 7, line 26). Sorensen et al. (US' 212) further, teaches a process for dyeing hair comprising applying to the hair the above dyeing composition for a sufficient period of time and under conditions sufficient to permit oxidation of the precursor (oxidation base) into a colored compound wherein the process similar to those claimed as claimed in claims 31-37 (see 3, lines 28-39). Regarding claim 38, it would have been also obvious to one having ordinary skill in the art at the time the invention was made to use a multi-compartment dyeing device to separate the oxidizing agent from the dyeing composition because the reference teaches a process for dyeing hair wherein the oxidizing solution is added to the dyeing composition and applied to the hair (see col. 13, lines 1-7) and, thus, a person of ordinary skill in the art would be motivated to separate these dyeing ingredients by using a multi-compartment devices as those claimed, absent unexpected results.

Although Sorensen et al. (US' 212) generally discloses a hair dyeing composition comprising oxidation bases (dyeing precursors) of p-phenylenediamine, enzymatic system of 2-electron oxidoreductase such as glucose oxidase, donors such as D-glucose and enzymatic mediators such as N-hydroxysuccinimide, syringate acids, 10-methylphenothiazine and 3,3-

dimethylbenzidine, the reference does not require such a hair dyeing composition with sufficient specificity to constitute anticipation.

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to formulate such a dyeing composition, as taught by Sorensen et al. (US' 212) with a reasonable expectation of success because such a dyeing composition that comprises oxidation bases (dyeing precursors), enzymatic system of 2-electron oxidoreductase, donors and enzymatic mediators, is falls within the scope of those taught by Sorensen et al, and is expressly suggested by Sorensen et al disclosure and therefore, is an obvious formulation.

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sorensen et al. (5,899,212) in view of Samain et al. (US 5,538,517).

Although Sorensen et al. (US' 212) generally discloses a hair dyeing composition comprising enzymatic system of 2-electron oxidoreductase such as glucose oxidase and other oxidoreductase enzymes such as a) laccases or related enzymes that generate water without any need for peroxide (e.g. H_2O_2), b) oxidases cover enzymes which act on molecular oxygen and yield peroxide (e.g. H_2O_2) and c) peroxidases cover enzymes which act on peroxide (e.g. H_2O_2) and yield water (see col. 3, lines 63-67 and col. 4, lines 1-4), the reference does not teach 2-electron oxidoreductase uricase as claimed.

Samain et al. (US' 517) teaches in analogous art a hair dyeing composition comprising oxidizing 2-electron oxidoreductase enzymes such as uricase (see col. 3, line 32).

Therefore, in view of the teaching of the secondary reference, one having ordinary skill in the art at the time the invention was made would be motivated to modify the dyeing composition of Sorensen et al. (US' 212) by incorporating the uricase enzyme as taught by Samain et al. (US'

517) with a reasonable expectation of success because Samain et al. (US' 517) teaches the uricase enzyme that belong to the species of genus 2-electron oxidoreductase as recited in the claimed invention, and, thus, a person of the ordinary skill in the art would be motivated to use the uricase enzyme which is belong to the same genus of the enzyme glucose oxidae that recited in the claimed invention to generate hydrogen peroxide in the dyeing composition and would expect such a composition to have similar properties to those claimed, absent unexpected results.

4 Claims 18-20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sorensen et al. (5,899,212) in view of Audousset et al. (US 5,769,903).

Although Sorensen et al. (US' 212) generally discloses a hair dyeing composition comprising non-heterocyclic oxidation bases such as para-phenylenediamines (see col. 9, lines 7-9) and heterocyclic bases such as indole or indoline derivatives (see col. 9, lines 1-2), the reference does not teach the oxidation bases of specific heterocyclic compounds of pyridine, pyrimidine and pyrazole derivatives and oxidation double bases as claimed.

Audousset (US' 903) in another analogous art of hair dyeing composition, teaches the equivalence of non-heterocyclic bases such as para-phenylenediamines and double bases to heterocyclic bases such as pyridine and pyrimidine derivatives as claimed in claim 22, (see col. 5, lines 10-67 and col. 6, lines 40-51). The prior art further, discloses the use of double bases such as N,N'-bis (4-aminophenyl) teramethylenediamine as claimed in claims 18-20, (see col. 5, lines 60-61) in the hair dyeing composition.

Therefore, in view of the teaching of the secondary reference, one having ordinary skill in the art would be motivated to modify the primary reference by incorporating the claimed double bases and heterocyclic bases such as pyridines and pyrimidines as disclosed by Audousset to

make such a dyeing composition. Such modification would be obvious because one would expect that the use of heterocyclic bases that provide for improved strong colorations in varied shades as taught by Audousset would be similarly useful and applicable to the hair dyeing composition of Sorensen et al.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eisa B Elhilo whose telephone number is (571) 272-1315. The examiner can normally be reached on M - F (8:00 -5:30) with alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on (571) 272-1316. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eisa Elhilo
Patent Examiner
Art Unit 1751

June 9, 2004